
BWSR FEATURED PLANT

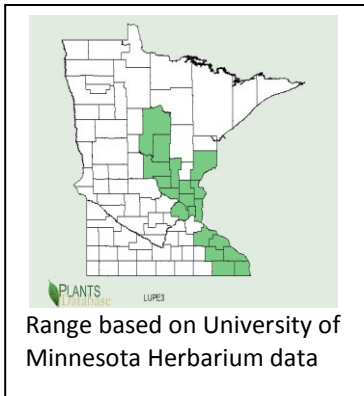
WILD LUPINE *Lupinus perennis*

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Wild lupine is a showy perennial plant that grows on dry, sandy soils in prairies and savannas. The species has been a focus of planting efforts as it provides nectar for a wide variety of insects and is an essential species for the endangered Karner Blue Butterfly. Its seed coats are tough, so fire or scarification is often needed to initiate germination. Prescribed fire, logging and grazing can improve habitat for the species. Fire suppression and habitat loss have led to the decline of lupine and Karner Blue butterflies. As trees and shrubs begin to establish the plant may cease to flower and eventually disappear.

Identification



Wild lupine are typically 8-18" tall and have pea-like flowers that bloom in early to mid May. The flowers have upper and lower portions and are typically blue, but can also be pink or white. The upper and lower parts of the flower have dark blue veins and are forced open by insects in order to reach a horn shaped stamen. The leaves contain 7-11 leaflets (1/2-2" long) that radiate outward like a palm leaf. Leaflets are smooth and medium green on top, and pale green and slightly hairy below.



Wild lupine blooming in mid May

Range

Wild Lupine (*Lupinus perennis*) is found as far east as Maine, and as far south as Florida. Minnesota is on the west end of its range and it is only native to eastern and central parts of the state. There are over

Wild lupine is the only food source for the caterpillar of the endangered Karner Blue butterfly

300 species of *Lupinus* worldwide and a total of seven species native to the United States including *Lupinus polyphyllus*, *Lupinus nuttallii*, *Lupinus diffuses*, *Lupinus villosus*, and *Lupinus plattensis*. *Lupinus polyphyllus* was introduced from the northwest United States, and has become an aggressive species in northeast Minnesota. *Lupinus polyphyllus* is a larger plant with tall flower spikes and leaves that have 9-17 leaflets.



Karner Blue Butterfly MI DNR

Uses

Wild Lupine is pollinated by honey bees, as well as a variety of native bees, butterflies, ants and beetles. The plant is also a food source for a variety of caterpillars including the Frosted Elfin (*Callophrys irus*), and is the only food for the larvae of the Karner Blue Butterfly (*Lycaeides melissa samuelis*).

Like other legumes, lupine fixes nitrogen and have seeds high protein. *Lupinus* species tend to be high in alkaloids that make the seeds bitter, and potentially toxic. These alkaloids have been removed historically by soaking the seeds. A “sweet lupine” was developed by plant breeders in Germany in the 1920s that is alkaloid free and is now grown in Russia, Poland, Germany and the Mediterranean as food source for humans and livestock (U of Minn. and U of Wisc., 1989).



Native bee opening a lupine flower

Planting Recommendations

Seed can be collected from wild populations of lupine, but it is important that no more than one-third to one half of the available seed be collected, and that it is not collected in areas that are used by Karner Blue butterflies. Permits may also be needed for seed collection on public lands. The seed pods of wild lupine ripen and turn brown or black in early summer. After drying, the seed pods split open and propel the seeds. When collecting seed, the pods should be collected after they turn black (late June or early July), then placed on drying racks that are covered by netting or screens that will collect seed as the pods explode. After the seed is dry (after a few weeks) it can be stored in paper bags in a cool, dry location.



Seed can be planted in containers or broadcast seeded into restoration sites. The seed generally requires scarification to germinate; seed can be scarified with sandpaper by scratching the seedcoat. The seeds can then be soaked overnight in tepid (lukewarm) water. Before sowing, seeds should be treated with rhizobium inoculant. When planting in containers, seed should be covered with about ¼” of soil. The plants can be transplanted when they have 2-3 leaves - waiting too long can lead to root rot. Seeds can also be cleaned and stored dry at 40° F for several months, and then planted directly in the restoration site the following spring (NRCS 2012).

Seed scarification and inoculation is typically needed for successful establishment.

The seed can do well on poor, sandy, or gravelly soil and prefers acidic conditions. It is common to plant seed in the fall before the ground freezes. There are some reports that fall-planted seed may not need to be scarified or inoculated, but it is still a good step to ensure successful establishment. Seed can be lightly raked into bare patches of soil or areas where weeds have been controlled. The seed will germinate in the spring when there is sufficient soil moisture and temperatures are above freezing.

Additional References

http://plants.usda.gov/plantguide/pdf/cs_lupe3.pdf (NRCS 2012)

<http://plants.usda.gov/java/profile?symbol=lupe3>

<http://www.minnesotawildflowers.info/flower/wild-lupine>

<http://www.hort.purdue.edu/newcrop/afcm/index.html> (U of Minn. and U of Wisc., 1989)